

## GENEALOGY AND GENETICS

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As a pleasant and harmless form of antiquarianism, the study of family history, biography, and the tracing of genealogy are tolerantly humored but certainly not seriously honored by historians and scientists. This preoccupation which engrosses hundreds of good minds in every generation in Virginia, is not frowned upon as are phrenology and palmistry, which are provably fallacious pseudo-science, but family records are considered of no importance in the larger world of scholarship and science unless related to the lives of distinguished persons.

Genealogy, that delight of the family historian and Eldorado of professional "bureaus" and "experts", has even been relegated to the category of pathology by facetious youth in the high school of one of our larger Virginia cities. The mother of a quite young lady in this school, considering herself as belonging in the category of the F. F. Vs, delighted in dabbling in genealogy. In high school the small daughter, presumably with her nose at a slightly elevated angle, and apparently with little knowledge of just what the phrase meant (except that she had inferred from "Mama" that it implied some sort of distinction) let it be known to her classmates that she "had ancestors". Some facetious wag commenced pointing at the pretentious young thing and remarking, "She's got ancestors!" It was not long before it was fun for everybody to remark, of course in the hearing of the victim, "She's got ancestors! She's got ancestors!" It is said that the very young lady of superior lineage almost went into a decline until the fond parent carefully explained to her that having ancestors is in no way to be confused with having adenoids, or such like; and explained further, we hope, that if one "has ancestors" it is best not to make it a point of issue in high school.

Strangely enough, up until now in scientific research, genealogy has scarcely been perceived by human geneticists to be an adjunct to the science of genetics. The reason is plain, and this neglect and mental occlusion on the part of geneticists is quite logical. The study of human genetics is the child of biology: biology has been the study of lower forms of life: the individuals in the generations of plants and animals do not (except in the case of domesticated, pedigreed animals, such as dogs, cattle and horses) have names. Yet the simple fact is, of course, that accurately recorded genealogy is scientific data.

In contrast to genetics, the sciences of ethnology and sociology have long since perceived the possibilities, in some types of research the necessity, of utilizing genealogy as a tool. Two decades ago a now distinguished Chinese scholar wrote his Ph.D. dissertation at Harvard on the history of migration and settlement in China, basing the study upon the spread and distribution of family names, and as he wrote in his preface, attempting "to combine the zoölogical and the genetic methods."<sup>1</sup> "Genealogy in China", wrote Dr. Li, "is a regular science, if it may be so called. This has made possible the existence of a rich mass of genealogical material . . . . It has been a custom in China for many generations for everybody, from the middle class up, to keep a full genealogical record, zealously guarded, in the ancestral hall. After the invention of the printing press it was usually printed, whenever the family could afford it. Otherwise, it was kept in manuscript form. The literature has grown so voluminous that even the making of a simple bibliographical list would be an impossible task. But the encyclopedia gives an excellent summary of the best available knowledge. . . . . It consists of abstracts and a compilation. The abstracts, in general, are concerned with the facts of the origin of the different surnames; the compilation is a vast national biography of all the prominent Chinese up to 1644 A. D., classified according to their surnames." So, in China, whose continuity and security of folk consciousness, whose social and economic stability, are due more to the cement of family solidarity than to any other single factor, everyone from the humblest peasant to the richest mandarin or most brilliant scholar, has "got ancestors", thanks perhaps primarily to that deep and far-visioned sage and sociologist, Confucius, and the philosophical system which he established.

In India, genealogy amongst the higher castes is both the vehicle of history and one of the instrumentalities through which the stability of society is maintained by means of the caste system. For Brahmins and others of the higher caste Hindus, the family tree stands not only as the guaranty of status, upon which marriage, inheritance, economic and social function depend, but the recital of genealogies on ceremonial occasions assumes the role of ritual. Caste in India is now archaic, and its sins are legion; but in its day it was a brilliant solution on the part of our distant Asiatic cousins (who colonized India 3500 years ago) of the problem of race mixture, social status and economic function.

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<sup>1</sup> Li Chi, *The Formation of the Chinese People*, an anthropological inquiry, Harvard University Press, 1928.

Equally in the island world of the eastern Pacific, which ethnologists term Polynesia, whose brown folk of mixed Caucasoid and Mongoloid racial strains had distinctive and in some ways distinguished cultural attainments, genealogy was the very keystone of the whole economic, social and religious system. Inheritance, marriage, ritual, depended upon it. Land titles even today rest upon ancient genealogical tradition. History was recorded by means of genealogies. Lacking any form of writing, the Polynesians had family and tribal bards whose function it was to retain in memory and transmit by word of mouth the genealogical sequences of names of notable lines with the outstanding concurrent events associated therewith. So accurate are these records that in the case of the Maoris it has been established, by comparing these orally transmitted genealogies of the Maori chieftains with those of Tahiti, that their main migration from Tahiti and the adjacent islands to New Zealand was in the 14th century.

So we may correctly say, as a broad generalization, that the civilizations of the South and East Asiatic peoples, and of the folk of the Island worlds extending south and eastwards from Asia, are cultures founded upon the family as the social unit, with genealogy and ancestor worship as primary factors maintaining continuity, and with genealogy as a basic means of historical and social record and study. Likewise in the study of native sociology and economics even among folk who are not themselves conscious of "having ancestors", genealogies have come to be increasingly important to ethnologists as a means of interpreting many varieties of information relating to the individual in the family pattern. If the people concerned are not themselves genealogists, the ethnologist must himself become one on their behalf: no modern social anthropologist today would consider a detailed study of a community or tribe to be complete without tabulation of genealogies of the families involved, a tabulation which amounts to a sort of elaborate scientific census.

The authors of this article are interested in the possibilities of bringing genealogy and genetics into some tangible relation in the study of a civilized people. They are therefore moving slowly and experimentally in an effort to work out a technique for making records which will adequately cover the essential facts of genealogy and genetics relating to individuals in the frame of family lines. The work was started in 1941 as an independent exploratory project, with a grant-in-aid from the Virginia Academy of Science. A paper read at the Roanoke meeting of the Academy in May, and published in

the Virginia Journal of Science for that month, describes the scientific aspect of the program.

In the genealogical phase of our first year of exploratory work, we have tentatively investigated the resources of the Library of Congress, the Alderman Library at the University, the Historical Society and State libraries of Richmond, and the Library of the College of William and Mary. Naturally, Dr. Swem's *Virginia Historical Index* has been of inestimable value in this exploratory work, and will be so increasingly as the work proceeds.

Briefly, the procedure that has gradually emerged as the most practicable for the purposes of the investigation is that of utilizing a large sheet which we term our "Comprehensive Chart" as a means of tabulating the essential data relating to the person studied and to forebears, relatives and descendants. Much tedious description may be avoided by representing the structure of the chart by means of a descriptive drawing (Fig. 1).

In the circle, A, at the centre of the chart, is entered the name of the *propositus*, the person studied. Radiating above, filling the space marked B, are the names of his (or her) forebears entered in the subdivided semi-circular zones, following one old and well-established practice in charting genealogy. In the space C are blocks of brackets for names of *propositus*' children and grandchildren, uncles and aunts, cousins, nephews and nieces. B represents the total potential field of genetic inheritance from forebears, while C is the total spread in contemporary and subsequent generations of those having the same forebears.

Panel D carries a list covering cultural activities and interests in adult life and fundamental conditioning influences affecting the childhood of the *propositus*. The items characteristic of the *propositus* are marked to indicate negative, passive or positive. Each item is represented by a simple pictographic symbol, and those symbols marked positive are entered over the name of the *propositus*, thus giving a quick visual record of cultural character. This record is based on any and all documentary evidence available, and in the case of the living, on interview, life history, etc.

Panel E defines the *propositus* physically, in terms of (1) Constitutional Type [body build] and (2) Ethnic or Racial Type. The characteristics so defined are also represented by symbols, constitutional type being shown by a combination of numbers, ethnic characteristics by letters.<sup>2</sup> These symbols are entered underneath the name of the *propositus*.

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<sup>2</sup> The definition of constitutional type follows the technique recently worked out by Dr. William H. Sheldon of Harvard (*Varieties of Human*

Now, in so far as information becomes available, the symbols representing cultural character and physical traits of each forebear and related contemporary or descendant will be entered above and below the respective names of the *propositus*' relatives in Spaces B and C. Supposing a chart to be complete—and we believe it to be possible that in the course of years of work a considerable number of charts will be relatively complete—then the Comprehensive Chart will have become a genetic map revealing the distribution of characters throughout the field of observation represented by the chart, namely in the “blood lines” focusing in the *propositus*. Part of our plan is to work on interrelated lines, which will make the data cumulative.

The technique and procedure described above is, like all efforts to pin down evidence relating to human heredity, complicated and tedious, but the use we shall make of the evidence is quite simple. The aim of the study is to discover what correlations there may be between cultural and psychological character and physical type, to what degree these are inherited, and how they are affected by environment. Our concern is with the normal, sound and positive in persons and families, not with individual or social pathology, which heretofore has occupied most of the attention of geneticists and eugenists, because their approach has mainly been along the line of medical or social problems, and also because pathological traits are easier to isolate and study than the combinations that make up normality—and also, we suspect, because the unpleasant has a peculiar power of stimulating curiosity. We definitely are not curious about the skeletons in anybody's family closet: we know every family has some: and we presume that in this frank and enlightened day most people would agree that the best thing to do is to take them out of the closet and give them a decent burial.

When we can interview persons, all is well. When we find relatives, willing and with good memories, all is well. But finding what we want by searching biographical and documentary materials for the information required in defining cultural character and physical type of persons long since deceased, is very tedious. All family historians know well the typical paucity of exact detail in the midst of profusion of conventional phrases: “He was a man of distinguished bearing and appealing personality”—how much better to have read, “He stood 5 feet 8 inches high, was small shouldered

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*Physique*, Harpers, 1940); that of ethnic type, the older criteria defining racial types exemplified in *The Races of Europe* (MacMillan, 1939) by Dr. Carleton S. Coon, also of Harvard.

and large of girth, a good liver, rubicund, jolly, with a brush of sandy whiskers, bright blue eyes, and a shiny baldpate." "She was a noted beauty in the county, a true Christian, a devoted wife and mother, and withal a lady of artistic and intellectual attainments"—how we should have thanked her graceful biographer for a little more precision, something like this perhaps: "Her clear forehead, auburn hair and golden eyes she had from her father, while the full rosy cheeks, piquant nose, mouth and chin were her mother's; she was a conventional, honest Presbyterian; loyal to husband and children, but always said she wished she could have gone on the stage, and preferred Bulwer Lytton to Mrs. Rorer."

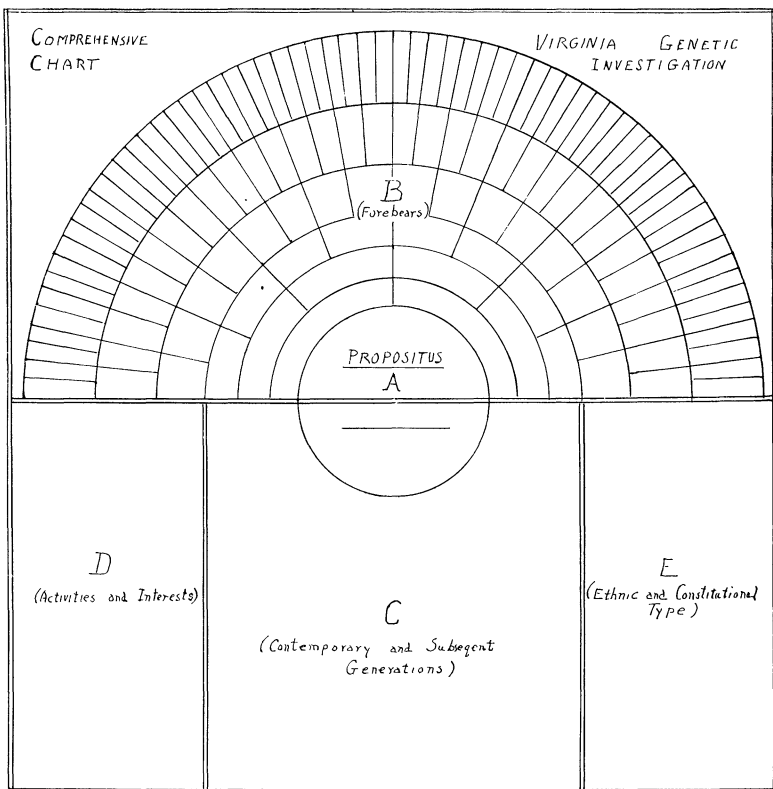
In the course of discussion of our problems with one intimately acquainted with literary genealogical-historical sources, we have received the suggestion that many family historians and genealogists might be interested to know what precise or general data are deemed essential for study of personality and heredity, as supplementing the usual facts relating to place of birth, residence and death, occupation, public service, estate, marriage and offspring. Bearing this suggestion in mind, we have attempted below a condensation of the factors that we seek to define on a "Comprehensive Chart."

#### CULTURAL CHARACTER

A. (1) Interest, (2) Aptitude, and (3) Accomplishment<sup>3</sup> in the following fields of activity:

Art	Management and Planning
Writing	Operation (of machines, etc.)
Language	Command
Reading and Study	Naval Service
Public Speaking	Military Service
Teaching and Preaching	Civil Service
Ethics and Worship	Travel
Social Work and Science	Mechanics
Fraternal Organizations,	Mathematics
Clubs	Engineering
Politics	Craftwork
Law	Physical Science
Secretarial Work	Natural Science
Commerce	Medicine
Finance	Land Culture
Production and Provision	Breeding
Promotion, Speculation	Sport

<sup>3</sup> Be it noted that accomplishment may be high in an activity to which there is genuine antipathy (intense *negative* interest), as in the case of General Lee, who disliked heartily the drudgery of his voluminous and masterly military and official correspondence.



Comprehensive Chart.

## B. Conditioning factors in childhood:

Social Status	Church	Rural
Home	Place in Family	Town
Education	Relations with Father or Mother	Urban

## CONSTITUTIONAL TRAITS

Stature  
 Weight  
 Build (fleshy, thin, heavy-set)  
 Set of head and neck  
 Proportions of trunk and limbs  
 Shape of hands  
 Facial expression  
 Energetic or lethargic  
 Nervous, placid or phlegmatic  
 Emotional tone  
 Sociableness and amiability  
 Gait and posture  
 Appetite and digestion  
 Sleeping habits  
 Texture of skin and hair  
 Quality of voice  
 General health  
 Proneness to particular ailments  
 Stamina  
 Cause of death  
 Age

As in the case of ethnic traits, photographs are important here. How many genealogists would find their family trees becoming truly fascinating if they would hang along their branches reproductions of tintypes, daguerrotypes, portraits and snapshots! The subtle intermingling of facial traits, the persistence and dominance of certain features characterizing a "family type", are most interesting when the portraits of three or four generations are ranged in sequence, in generations.

## ETHNIC TRAITS

These require instruments and indices for actual determination, but much can be learned from photographs of the head (full face and profile), seated or full length poses, accompanied by indications as to the color and texture of skin and its reaction to sunburn, color and form of eyes, color and form (straight, wavy, curly) and texture of hair (head, eye-



brows, moustache, beard). A lock of hair alone may tell much. Lacking photographs, a careful description of features and resemblance to known relatives is of very great value in the case of an individual in a sequence of heredity in which relatives are known whose ethnic composition may be approximated genealogically. In most old Virginian families deriving from Tidewater, Piedmont, Valley or Mountain strains whose genealogies are recorded or remembered, a fair approximation of ethnic background (English, Scotch, Scotch-Irish, Huguenot, German, etc.) may be made.

To all those interested in collecting genealogical data for their own personal and family satisfaction, we cannot too strongly recommend that they include in their search for and in their recording of such data descriptive and definitive details such as are listed in the foregoing paragraphs, in so far as such are available. Through such an amplification of their records they will not only be putting their labors and their findings upon a scientific basis, and rendering them far more valuable in an historical sense, but they will be adding infinite interest and zest to their own researches, and enriching the family story for subsequent generations by a fascinating accumulation of the living stuff of human personality and type.

Perhaps we should remark that we have no ulterior motives in making these suggestions. The families we ourselves shall be able to study will be relatively few, and these we shall have to study for ourselves, of course with the approval and coöperation of the persons involved. In fact, this article comes in response to Dr. Swem's suggestion that as an elaboration of the delightful leisurely study which genealogy usually represents, the procedures here outlined might be capable of transforming this pastime into an activity having not only a more vital interest for the persons and families involved, but also great potential value for students of human heritage in years to come. As such activity becomes more widespread among family genealogists there is little doubt that their recordings will increasingly become a fruitful source of evidence bearing on the laws which govern the inheritance of human character and endowment, than which there is probably no more significant study in modern science.